IN THE CLAIMS

1.   (currently amended) A knowledge-based diagnostic imaging system, comprising:

diagnostic equipment for analyzing a patient to obtain a new patient data set containing at least one of MR data, CT data, ultrasound data, x-ray data, SPECT data and PET data, said diagnostic equipment ~~automatically~~ analyzing said new patient data set to obtain measured parameters;

a database containing past patient data sets for previously analyzed patients, said past patient data sets containing ~~data indicative of~~ at least one of standard values and measured values for physiologic parameters with respect to previously analyzed patients;

a network for interconnecting said diagnostic equipment and said database to support access to said past patient data sets; and

a controller for accessing said database based on said new patient data set ~~and providing automated instructions~~ and wherein said controller ~~diagnostic equipment compares new and past patient data sets to determine whether additional information is needed and highlights abnormalities in an image generated from said new patient data set, said highlighting including color coding the image or surrounding indicia to identify a feature not found in the database~~ compares the measured parameters from the new patient data set to the standard values for the physiologic parameters from the past patient data sets to identify an abnormality and if an abnormality is not identified further compares the measured parameters from the new patient data set to the measured values for the physiologic parameters from the past patient data sets.

2.   (original) The knowledge-based diagnostic imaging system of claim 1, wherein said diagnostic equipment is an ultrasound system and said new patient data set contains at least one ultrasound image.

3.   (previously presented) The knowledge-based diagnostic imaging system of claim 1, wherein said physiologic parameter is for a myocardium and said controller accesses

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said database based on at least one of an AV-plane, tissue velocity, systolic transition, myocardium period length, hypertrophy, diastolic point, heart size and heart shape.

4.   (previously presented) The knowledge-based diagnostic imaging system of claim 1, wherein said controller accesses said database based on at least one of contraction patterns and velocity profiles of a myocardium of the previously analyzed patients.

5.   (canceled)

6.   (canceled)

7.   (original) The knowledge-based diagnostic imaging system of claim 1, wherein said controller compares at least one of said past patient data sets to said new patient data set.

8.   (original) The knowledge-based diagnostic imaging system of claim 1, wherein said diagnostic equipment includes an ultrasound machine for generating a new patient image from said new patient data set and for identifying said physiologic parameter based on said new patient image.

9.   (original) The knowledge-based diagnostic imaging system of claim 1, wherein said diagnostic equipment automatically measures values for said physiologic parameter from said new patient data set.

10.   (original) The knowledge-based diagnostic imaging system of claim 1, wherein said new and past patient data sets represent new and past patient images, respectively, said controller identifying matches between said new and past patient images.

11.   (original) The knowledge-based diagnostic imaging system of claim 1, said controller further comprising a processor located separate and remote from said diagnostic equipment, said processor comparing said new patient data set to said past patient data sets to identify matches.

12.   (currently amended) A method for providing knowledge-based diagnostic imaging, comprising:

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analyzing a patient to obtain a new patient data set containing at least one of MR data, CT data, ultrasound data, x-ray data, SPECT data and PET data;

~~automatically~~ analyzing said new patient data set to obtain measured physiologic parameters;

accessing past patient data sets for previously analyzed patients, said past patient data sets containing ~~stored patient values indicative of said~~ at least one of standard values and measured values for physiologic ~~parameter~~ parameters with respect to previously analyzed patients;

~~analyzing said past patient data sets of previously analyzed patients based on said new patient data set to generate a suggested action;~~

~~comparing new and past patient data sets and determining whether additional information is needed based on said comparison; and~~

comparing the measured physiologic parameters from the new patient data set to the standard values for the physiologic parameters from the past patient data sets to identify an abnormality; and

comparing the measured physiologic parameters from the new patient data set to the measured values for the physiologic parameters from the past patient data sets if an abnormality is not identified

~~highlighting abnormalities in an image generated from said new patient data set that are unique to a current patient and not found in the past patient data sets~~.

13.   (original)   The method of claim 12, wherein said analyzing the patient includes obtaining ultrasound images of the patient as said new patient data set.

14.   (original)   The method of claim 12, wherein said automatically analyzing said new patient data set includes measuring at least one of an AV-plane, tissue velocity, systolic transition, myocardium period length, hypertrophy, diastolic point, heart size and heart shape.

15.   (previously presented) The method of claim 12, wherein said past patient data sets contain at least one of contraction patterns and velocity profiles of a myocardium of the previously analyzed patients.

16.   (canceled)

17.   (original) The method of claim 12, wherein said analyzing the patient includes generating a new patient image from said new patient data set and said automatically analyzing includes identifying said physiologic parameter from said new patient image.

18.   (original) The method of claim 12, wherein said automatically analyzing includes measuring values for said physiologic parameter from a patient image.

19.   (canceled)

20.   (canceled)

21.   (currently amended) A network comprising:

diagnostic equipment for analyzing a patient to obtain new patient images based on at least one of MR data, CT data, ultrasound data, x-ray data, SPECT data and PET data, said diagnostic equipment automatically analyzing a said new patient images;

a database containing past patient images for previously analyzed patients; and

an interconnection between said diagnostic equipment and said database, said database providing past patient images for previously analyzed patients and wherein said interconnection provides on-line ~~real-time~~ contemporaneous interaction between healthcare providers at different interconnected healthcare facilities; and

a controller for accessing said past patient images based on said new patient images and providing automated instructions and wherein said diagnostic equipment determines whether additional information is needed from an operator after comparing said new patient image to said past patient images.

22.   (original) The network of claim 21, wherein said diagnostic equipment includes an ultrasound machine.

23.   (previously presented) The network of claim 21, wherein said physiologic parameter is for a myocardium and includes at least one of an AV-plane, tissue velocity, systolic transition, myocardium period length, hypertrophy, diastolic point, heart size and heart shape.

24.   (previously presented) The network of claim 21, wherein said past patient images contain at least one of contraction patterns and velocity profiles of a myocardium of the previously analyzed patients.

25.   (original) The network of claim 21, wherein said diagnostic equipment is located at a primary health care site.

26.   (original) The network of claim 21, wherein said diagnostic equipment determines where said physiologic parameter for the new patient is abnormal.

27.   (original) The network of claim 21, wherein said diagnostic equipment highlights, in said new patient image, an abnormality.

28.   (canceled)

29.   (previously presented)   The network of claim 21, wherein said interconnected healthcare facilities comprise at least one of a university hospital, a regional hospital, a private practice and a mobile service.

30.   (new) The knowledge-based diagnostic imaging system of claim 1, further comprising providing patient information for at least one study of a pathology similar to a highlighted abnormality.

31.   (new) The knowledge-based diagnostic imaging system of claim 1, wherein if no abnormality is identified, storing in said database a combination of new values for the measured parameters.

32. (new) The knowledge-based diagnostic imaging system of claim 1, wherein the controller is configured to provide automated instructions for patient examination based on the comparison of new and past patient data sets.

33. (new) The network of claim 21, wherein one of the healthcare providers comprises a healthcare specialist.

34. (new) The network of claim 21, wherein the contemporaneous interaction occurs while a patient is at a location of one of the healthcare providers.

35. (new) The network of claim 21, further comprising a call center interconnected with the healthcare facilities.